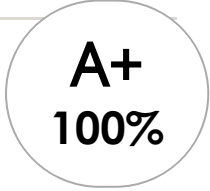


## 65 Multiple choice questions



**A+**  
**100%**

1. What are the characteristics of the APU (start cart)?
  - a. 30mins with a 50% charge
  - b. 37,000 RPM and 38,000 RPM
  - c. It is a 325A slow blow fuse current limiter.
  - d. **CORRECT: 28 Vdc/300A continuous, 1,000A for 0.1 seconds if required**
  
2. What is the benefit of having both a centrifugal and axial compressor?
  - a. No, it is a fre shaft turbine, i.e. powered by air.
  - b. It is a 325A slow blow fuse current limiter.
  - c. Beech Aircraft Corporation in Wichita, Kansas,
  - d. **CORRECT: A centrifugal compressor is most efficient at high RPM and an axial compressor is most efficient at low RPM.**
  
3. Describe the fuel transfer pump.
  - a. Takeoff roll and in flight. Never on ground!
  - b. **CORRECT: Located in the center section tank and pumps fuel from inboard wing tank to nacelle at 500 PPH(75GPH).**
  - c. Fully open when N1 < 62%  
Fully closed when N1 > 75%
  - d. It incorporates anti-servo action, i.e. elevator goes up into the wind, trim tab also goes up into the wind. This gives more pitch authority.
  
4. What is the primary mission of the T-44C?
  - a. No, it is a fre shaft turbine, i.e. powered by air.
  - b. In = increased pitch  
Out = decreased pitch
  - c. **CORRECT: Primarily to train SNAs to fly multi-engine turboprop aircraft and secondarily to transport passengers and/or cargo.**
  - d. Beech Aircraft Corporation in Wichita, Kansas,
  
5. When does the transfer pump energize?
  - a. 14 fuel nozzles and 2 igniter plugs.
  - b. The hot battery bus and fuel bus.
  - c. Takeoff roll and in flight. Never on ground!
  - d. **CORRECT: Nacelle fuel quantity at 42 gallons and <3psi for 30"**

6. Are the reduction gear box and turbine physically connected?
- a. 7:1
  - b. 155 KIAS
  - c. CORRECT: Yes
  - d. 25%
7. What is the maximum dive/level flight airspeed (VMO) and how does it change?
- a. Limit switches and dynamic braking.
  - b. CORRECT: 227 KIAS to 15,500' MSL then -4kt/1000'
  - c. 1800 RPM to 2200 RPM
  - d. 14 fuel nozzles and 2 igniter plugs.
8. What is the maximum gear retraction speed (VLO)?
- a. CORRECT: 145 KIAS
  - b. 150 hours
  - c. 155 KIAS
  - d. 153 KIAS
9. What items are on the hot battery bus?
- a. CRANE:
    - COM1
    - RTU - NAV1 and COM1
    - AUDIO for Pilot
    - NAV1
    - ESIS
  - b. In = increased pitch  
Out = decreased pitch
  - c. "PEW it's hot"
    - Prop de-ice
    - Engine lip-boot heat
    - Windshield heat
  - d. CORRECT: FBCAST:
    - Fire extinguishers (LH & RH)
    - Baggage door light
    - Cabin door observer light
    - Aft dome light
    - Spar cover light
    - Aft dome light (reading light above non-flushing lavatory with privacy curtain)

10. When is the compressor progressive bleed valve fully open and when is it fully closed?
- a. In = increased pitch  
Out = decreased pitch
  - b. CORRECT: Fully open when N1 < 62%  
Fully closed when N1 > 75%
  - c. It is a 325A slow blow fuse current limiter.
  - d. In WX mode <300NM  
in WX+T(turbulence) mode <50NM
11. What does the FMS do?
- a. It is a 325A slow blow fuse current limiter.
  - b. CORRECT: Blends inputs from VORs, DMC, and GPS to compute present position. Uses one or more of: GPS, VOR/DME, 2xVOR, 2xDME, to get a position.
  - c. Current limiters are intact and the good generator is providing charge and voltage for the boost pumps.
  - d. It is part of the emergency flight instrument system.
12. What happens to the autofeather system when moving the power levers?
- a. It is part of the emergency flight instrument system.
  - b. It is a 325A slow blow fuse current limiter.
  - c. CORRECT: If one or both power levers are retarded below 90%, the system will be completely disengaged.
  - d. No, it is a fre shaft turbine, i.e. powered by air.
13. What are the signs of a primary governor failure?
- a. CORRECT: Propeller N2 speeds of 2288 +/-40 RPM or uncommanded propeller feather
  - b. No, it is a fre shaft turbine, i.e. powered by air.
  - c. Current setting or increase to 2200 RPM.
  - d. Nacelle fuel quantity at 42 gallons and <3psi for 30"

14. What items are on the left squat switch?

- a. "PEW it's hot"  
Prop de-Ice  
Engine lip-boot heat  
Windshield heat
- b. In = increased pitch  
Out = decreased pitch
- c. CORRECT: LEAP  
Left lip-boot heat  
Electric heater  
Ambient air solenoid  
Pressurization controls (preset solenoid and dump solenoid)
- d. CRANE:  
COM1  
RTU - NAV1 and COM1  
AUDIO for Pilot  
NAV1  
ESIS

15. A generator has failed and will not reset(left). No other failures are noted. You notice that the battery volt/ammeter is showing a discharge. What is the status of the current limiters? What is powering the boost pumps?

- a. The T-44C has 2 Pratt and Whitney PT6A-34B turboprop engines rated at 550SHP. They are reverse flow, free turbine engines with a 3 stage axial and 1 stage centrifugal compressor.
- b. Current limiters are intact and the good generator is providing charge and voltage for the boost pumps.
- c. CORRECT: The current limiter on the other side(right) of the blown generator has blown. The main battery is powering the boost pumps.
- d. It is part of the emergency flight instrument system.

16. What is the function of the oil to fuel heater and how does it work(temps associated)?

- a. No, it is a freeshaft turbine, i.e. powered by air.
- b. It is part of the emergency flight instrument system.
- c. CORRECT: Uses heat from engine oil to preheat engine fuel. When fuel temperature increases to 70°F (21°C) the valve begins to close and at 90°F(32°C) the valve fully closes and bypasses the heater core.
- d. Reduces interior noise and fuselage stress. It matches the slave prop(R) RPM to the master prop(L) RPM. It is limited to the props being +/- 30 RPM of each other. If malfunction is suspected, turn OFF and wait for it to recenter in 6 seconds, then turn ON.

17. What are the fixed airspeed references on the ASI display and how are they marked?
- Fully open when  $N1 < 62\%$   
Fully closed when  $N1 > 75\%$
  - CORRECT: VFE APP: 174 KIAS**  
**VFE FULL: 140 KIAS**  
**VYSE: 110 KIAS - marked with a blue line**  
**VMCA: 86 KIAS - marked with a red line**
  - UP:  $0^\circ/0\%$   
APPR:  $15^\circ/35\%$   
DOWN:  $43^\circ/100\%$
  - 28 Vdc/300A continuous, 1,000A for 0.1 seconds if required
18. What is a "bus tie" and what are its characteristics?
- It is part of the emergency flight instrument system.
  - The hot battery bus and fuel bus.
  - Overspeed or feather.
  - CORRECT: It is a 325A slow blow fuse current limiter.**
19. Flap pitch/percentage for FLAPS UP, APPROACH, and DOWN?
- 1800 RPM to 2200 RPM
  - $10^\circ\text{C}$  to  $99^\circ\text{C}$
  - The hot battery bus and fuel bus.
  - CORRECT: UP:  $0^\circ/0\%$**   
**APPR:  $15^\circ/35\%$**   
**DOWN:  $43^\circ/100\%$**
20. What is the generator/compressor RPM when N1 reaches 100% and 101.5% respectively?
- CORRECT: 37,000 RPM and 38,000 RPM**
  - 150 hours
  - 30mins with a 50% charge
  - 1800 RPM to 2200 RPM
21. What are some icing/IFR flight conditional features of the aircraft?
- CORRECT: It has a deicing/anti-icing system, instrumentation, and navigation equipment which allows flight under instrument and icing conditions.**
  - It incorporates anti-servo action, i.e. elevator goes up into the wind, trim tab also goes up into the wind. This gives more pitch authority.
  - It is part of the emergency flight instrument system.
  - Traffic alert and information NOT resolution, e.g. "turn L/R"

22. What items will secure the electric heater?
- "HOTSHOTS are always right"  
Hour [flight] meter INOP  
Operation of LDG GR circuit  
Transponder STBY  
Stall warning INOP  
Heat [right] lip-boot  
OPS of AHRS, DCU, GPS  
TAS and Radar STBY  
Stall warning heat to 14Vdc vice 28Vdc(in air)
  - CORRECT: "PEW it's hot"**  
Prop de-Ice  
Engine lip-boot heat  
Windshield heat
  - In = increased pitch  
Out = decreased pitch
  - FBCAST:  
Fire extinguishers (LH & RH)  
Baggage door light  
Cabin door observer light  
Aft dome light  
Spar cover light  
Aft dome light (reading light above non-flushing lavatory with privacy curtain)
23. What prevents over travel of the landing gear during extension/retraction?
- 30mins with a 50% charge
  - CORRECT: Limit switches and dynamic braking.**
  - 14 fuel nozzles and 2 igniter plugs.
  - In the right wing root.
24. What are the functions of the safety valve?
- Beech Aircraft Corporation in Wichita, Kansas,
  - No, it is a freeshaft turbine, i.e. powered by air.
  - CORRECT: Serves as a dump valve to relieve pressure differential between external/cabin air pressure and ENSURES THE DIFFERENTIAL DOES NOT EXCEED 4.9 PSI.**
  - A jackscrew and the dynamic brake holds the gear in the UP position.

25. What items are on the right squat switch?
- "OUR VA":
    - Overvoltage protection at 31Vdc
    - Undervoltage protection at 18Vdc
    - Reverse current protection
    - Voltage regulation at 28.25 +/- 0.8Vdc
    - Automatic paralleling
  - CORRECT: "HOTSHOTS are always right"**
    - Hour [flight] meter INOP
    - Operation of LDG GR circuit
    - Transponder STBY
    - Stall warning INOP
    - Heat [right] lip-boot
    - OPS of AHRS, DCU, GPS
    - TAS and Radar STBY
    - Stall warning heat to 14Vdc vice 28Vdc(in air)
  - "PEW it's hot"
    - Prop de-Ice
    - Engine lip-boot heat
    - Windshield heat
  - In = increased pitch  
Out = decreased pitch
26. Describe the engines.
- No, it is a freeshaft turbine, i.e. powered by air.
  - CORRECT: The T-44C has 2 Pratt and Whitney PT6A-34B turboprop engines rated at 550SHP. They are reverse flow, free turbine engines with a 3 stage axial and 1 stage centrifugal compressor.**
  - The RGB provides a 15:1 reduction ratio from turbine to propeller, i.e at 33,000 turbine RPM the propeller is spinning 2,200 RPM and at 28,500 turbine RPM the propeller is spinning 1,900 RPM.
  - The current limiter on the other side(right) of the blown generator has blown. The main battery is powering the boost pumps.
27. What does/does not TAS provide?
- Nacelle fuel quantity at 42 gallons and <3psi for 30"
  - Beech Aircraft Corporation in Wichita, Kansas,
  - Takeoff roll and in flight. Never on ground!
  - CORRECT: Traffic alert and information NOT resolution, e.g. "turn L/R"**

28. Describe the synchrophaser.
- Uses heat from engine oil to preheat engine fuel. When fuel temperature increases to 70°F (21°C) the valve begins to close and at 90°F(32°C) the valve fully closes and bypasses the heater core.
  - Current setting or increase to 2200 RPM.
  - CORRECT: Reduces interior noise and fuselage stress. It matches the slave prop(R) RPM to the master prop(L) RPM. It is limited to the props being +/- 30 RPM of each other. If malfunction is suspected, turn OFF and wait for it to recenter in 6 seconds, then turn ON.**
  - It has a deicing/anti-icing system, instrumentation, and navigation equipment which allows flight under instrument and icing conditions.
29. Who is the manufacturer?
- Overspeed or feather.
  - 14 fuel nozzles and 2 igniter plugs.
  - Current setting or increase to 2200 RPM.
  - CORRECT: Beech Aircraft Corporation in Wichita, Kansas,**
30. What prevents the gear from erroneously extending?
- In = increased pitch  
Out = decreased pitch
  - It is part of the emergency flight instrument system.
  - Limit switches and dynamic braking.
  - CORRECT: A jackscrew and the dynamic brake holds the gear in the UP position.**
31. When will the safety valve close?
- Current setting or increase to 2200 RPM.
  - A jackscrew and the dynamic brake holds the gear in the UP position.
  - In = increased pitch  
Out = decreased pitch
  - CORRECT: Landing gear strut extension (takeoff)  
Cabin pressure switch set to TEST  
Vacuum source is lost  
Electrical power is lost**
32. A generator has failed and will not reset. No other failures are noted/ You notice that the battery voltage/ammeter is showing a slight 5A charge. What is the status of the current limiters? What is powering the boost pumps?
- Current setting or increase to 2200 RPM.
  - It is part of the emergency flight instrument system.
  - CORRECT: Current limiters are intact and the good generator is providing charge and voltage for the boost pumps.**
  - The current limiter on the other side(right) of the blown generator has blown. The main battery is powering the boost pumps.



33. How long will the aux battery last?
- a. 150 hours
  - b. CORRECT: 30mins with a 50% charge
  - c. 37,000 RPM and 38,000 RPM
  - d. 10°C to 99°C
34. What is the oil temperature normal operating range?
- a. 155 KIAS
  - b. 10 hours
  - c. CORRECT: 10°C to 99°C
  - d. 153 KIAS
35. How many fuel nozzles and igniter plugs are in the combustion chamber?
- a. CORRECT: 14 fuel nozzles and 2 igniter plugs.
  - b. The hot battery bus and fuel bus.
  - c. Above 2332 RPM.
  - d. Limit switches and dynamic braking.
36. What is the normal operating range of the propeller?
- a. 150 hours
  - b. CORRECT: 1800 RPM to 2200 RPM
  - c. 10°C to 99°C
  - d. Above 2332 RPM.
37. What are the altitudes associated with the autopilot?
- a. CORRECT: May engage >400AGL on departure  
1,000AGL cruise  
Disengage >180AGL on approach
  - b. In = increased pitch  
Out = decreased pitch
  - c. Battery start >22Vdc  
APU start 20Vdc<22Vdc  
Must charge battery 18Vdc<20Vdc  
Replace battery <18Vdc
  - d. UP: 0°/0%  
APPR: 15°/35%  
DOWN: 43°/100%

38. What are the four sources of DC power?
- a. CORRECT: 24V/42Ah lead acid main battery  
Left and Right 28V/250A starter-generator  
24V/5Ah lead acid auxiliary battery
  - b. Nacelle fuel quantity at 42 gallons and <3psi for 30"
  - c. The hot battery bus and fuel bus.
  - d. Landing gear strut extension (takeoff)  
Cabin pressure switch set to TEST  
Vacuum source is lost  
Electrical power is lost
39. Describe the reduction gear box.
- a. The T-44C has 2 Pratt and Whitney PT6A-34B turboprop engines rated at 550SHP. They are reverse flow, free turbine engines with a 3 stage axial and 1 stage centrifugal compressor.
  - b. No, it is a fre shaft turbine, i.e. powered by air.
  - c. It provides an operation test of the overspeed propeller governor by resetting the governor to maintain between 1900 RPM and 2100 RPM.
  - d. CORRECT: The RGB provides a 15:1 reduction ratio from turbine to propeller, i.e at 33,000 turbine RPM the propeller is spinning 2,200 RPM and at 28,500 turbine RPM the propeller is spinning 1,900 RPM.
40. What is the compression ratio of the compressor?
- a. 153 KIAS
  - b. Yes
  - c. CORRECT: 7:1
  - d. 155 KIAS

41. What are the functions of the L/R generator control boxes?

- a. "HOTSHOTS are always right"
  - Hour [flight] meter INOP
  - Operation of LDG GR circuit
  - Transponder STBY
  - Stall warning INOP
  - Heat [right] lip-boot
  - OPS of AHRS, DCU, GPS
  - TAS and Radar STBY
  - Stall warning heat to 14Vdc vice 28Vdc(in air)
- b. CORRECT: "OUR VA":
  - Overvoltage protection at 31Vdc
  - Undervoltage protection at 18Vdc
  - Reverse current protection
  - Voltage regulation at 28.25 +/- 0.8Vdc
  - Automatic paralleling
- c. In = increased pitch  
Out = decreased pitch
- d. UP: 0°/0%  
APPR: 15°/35%  
DOWN: 43°/100%

42. What are the voltage associated with the battery for starts?

- a. "OUR VA":
  - Overvoltage protection at 31Vdc
  - Undervoltage protection at 18Vdc
  - Reverse current protection
  - Voltage regulation at 28.25 +/- 0.8Vdc
  - Automatic paralleling
- b. May engage >400AGL on departure  
1,000AGL cruise  
Disengage >180AGL on approach
- c. In WX mode <300NM  
in WX+T(turbulence) mode <50NM
- d. CORRECT: Battery start >22Vdc  
APU start 20Vdc<22Vdc  
Must charge battery 18Vdc<20Vdc  
Replace battery <18Vdc

43. What is ESIS?

- a. In the right wing root.
- b. The hot battery bus and fuel bus.
- c. CORRECT: It is part of the emergency flight instrument system.
- d. It is a 325A slow blow fuse current limiter.

44. What is the maneuvering airspeed (VA)?
- CORRECT: 153 KIAS
  - 155 KIAS
  - 150 hours
  - 145 KIAS
45. When should PITOT heat be used?
- CORRECT: Takeoff roll and in flight. Never on ground!
  - 37,000 RPM and 38,000 RPM
  - In the right wing root.
  - The hot battery bus and fuel bus.
46. Where is the battery located?
- 1800 RPM to 2200 RPM
  - Above 2332 RPM.
  - 10 hours
  - CORRECT: In the right wing root.
47. Describe landing characteristics (FPM, type).
- 14 fuel nozzles and 2 igniter plugs.
  - Limit switches and dynamic braking.
  - Takeoff roll and in flight. Never on ground!
  - CORRECT: 600 FPM, flare landings only, 20 knot max crosswinds
48. Are the turbine and compressor physically connected?
- It is a 325A slow blow fuse current limiter.
  - Current setting or increase to 2200 RPM.
  - In the right wing root.
  - CORRECT: No, it is a fre shaft turbine, i.e. powered by air.
49. As the prop cone moves IN/OUT what happens to the pitch?
- In the right wing root.
  - It is a 325A slow blow fuse current limiter.
  - |   |
|---|
| Oil Px Increase == Cone Out == Pitch Decrease |
| Oil Px Decrease == Cone In == Pitch Increase  |
  - Limit switches and dynamic braking.

50. What are the ranges associated with the weather radar?
- CORRECT: In WX mode <300NM  
in WX+T(turbulence) mode <50NM
  - Takeoff roll and in flight. Never on ground!
  - No, it is a freeshaft turbine, i.e. powered by air.
  - The hot battery bus and fuel bus.
51. What two things power the dual powered items?
- 150 hours
  - CORRECT: The hot battery bus and fuel bus.
  - Overspeed or feather.
  - 10 hours
52. At what RPM does the fuel topping governor come online?
- 10 hours
  - 153 KIAS
  - 150 hours
  - CORRECT: Above 2332 RPM.
53. Describe the parallel between rudder pedals and nosewheel steering.
- No, it is a freeshaft turbine, i.e. powered by air.
  - In = increased pitch  
Out = decreased pitch
  - Beech Aircraft Corporation in Wichita, Kansas,
  - CORRECT: Nosewheel steering is controlled with pilot/copilot rudder pedals: 12° L and 14° right with a maximum deflection up to 48° with differential braking or being towed.
54. What are the dual powered fuel items on the hot battery bus?
- The hot battery bus and fuel bus.
  - Increased oil P = decreased blade angle, i.e. full power cruise (25°-35°)
  - In = increased pitch  
Out = decreased pitch
  - CORRECT: LH and RH boost pumps  
Crossfeed valve and crossfeed annunciator light (same fuse)  
LH and RH firewall shut-off valves

55. What are the signs of primary governor failure?
- CORRECT: Overspeed or feather.**
  - 1800 RPM to 2200 RPM
  - 10°C to 99°C
  - Above 2332 RPM.
56. What does the PROP GOV TEST do in the TEST position?
- CORRECT: It provides an operation test of the overspeed propeller governor by resetting the governor to maintain between 1900 RPM and 2100 RPM.**
  - The current limiter on the other side(right) of the blown generator has blown. The main battery is powering the boost pumps.
  - It is part of the emergency flight instrument system.
  - The RGB provides a 15:1 reduction ratio from turbine to propeller, i.e at 33,000 turbine RPM the propeller is spinning 2,200 RPM and at 28,500 turbine RPM the propeller is spinning 1,900 RPM.
57. How long can you suction lift?
- 155 KIAS
  - CORRECT: 10 hours**
  - 153 KIAS
  - 150 hours
58. What items still work in the event of a dual generator and main battery failure?
- Fully open when N1 < 62%  
Fully closed when N1 > 75%
  - CORRECT: CRANE:**  
**COM1**  
**RTU - NAV1 and COM1**  
**AUDIO for Pilot**  
**NAV1**  
**ESIS**
  - UP: 0°/0%  
APPR: 15°/35%  
DOWN: 43°/100%
  - FBCAST:  
Fire extinguishers (LH & RH)  
Baggage door light  
Cabin door observer light  
Aft dome light  
Spar cover light  
Aft dome light (reading light above non-flushing lavatory with privacy curtain)

59. What is the maximum gear extension/extended airspeed (VLE)?
- CORRECT: 155 KIAS**
  - 153 KIAS
  - 10 hours
  - 150 hours
60. What percentage of intake air is mixed with fuel and burned?
- 145 KIAS
  - Yes
  - CORRECT: 25%**
  - 7:1
61. How long can AVGAS be used in an emergency?
- CORRECT: 150 hours**
  - 155 KIAS
  - 10 hours
  - 25%
62. Given a left generator load of 0.8, a right generator load of 0.4, and air conditioning in AUTO, which statement is most correct?
- A jackscrew and the dynamic brake holds the gear in the UP position.
  - CORRECT: Abnormal generator paralleling exists and/or one of the current limiters has failed.**
  - It is a 325A slow blow fuse current limiter.
  - No, it is a fre shaft turbine, i.e. powered by air.
63. Describe the elevator trim tab.
- Current limiters are intact and the good generator is providing charge and voltage for the boost pumps.
  - CORRECT: It incorporates anti-servo action, i.e. elevator goes up into the wind, trim tab also goes up into the wind. This gives more pitch authority.**
  - Located in the center section tank and pumps fuel from inboard wing tank to nacelle at 500 PPH(75GPH).
  - A jackscrew and the dynamic brake holds the gear in the UP position.
64. What is the relationship between oil pressure and blade angle?
- It is a 325A slow blow fuse current limiter.
  - In = increased pitch  
Out = decreased pitch
  - CORRECT: Increased oil P = decreased blade angle, i.e. full power cruise (25°-35°)**
  - A jackscrew and the dynamic brake holds the gear in the UP position.

65. What are the signs of prop linkage failure?
- a. In the right wing root.
  - b. CORRECT: Current setting or increase to 2200 RPM.
  - c. Above 2332 RPM.
  - d. Overspeed or feather.